

24V DRIVE, 2-COLOR THERMAL PRINTER

3" TYPE MECHANISM

FTP-632MCL101/102/353/354

■ OVERVIEW

New 2-color printer (blue/black or red/black) joins FTP-602 Series. The series consists of 24V battery drive compact thermal printers which can print at high speed.

This series is suitable as built-in printer for a variety of applications, such as portable terminals, POS terminals, ticket machines, coupon machines, label printers, banking machines, measuring devices, medical equipment, etc.

■ HIGHLIGHTS

- **2 Color printing**

It can print 2 colors: blue/ black or red/black

- **High speed printing**

It can print at 100 mm/s (800 dotlines/s) by using Fujitsu Components' unique head drive control (at monochromatic printing).

Speed of 2-color printing:
- blue and red: 80 mm/s (460 dotlines/s) maximum
- monochromatic print: 40mm/s maximum

- **Auto Cutter**

Printer with auto cutter (full cut/ partial cut) is available.

- **Paper auto loading function**

Thermal paper can be loaded without head-up lever operation.

- **Easy head access**

It is designed for easy head cleaning and head replacement.

- **Two paper paths**

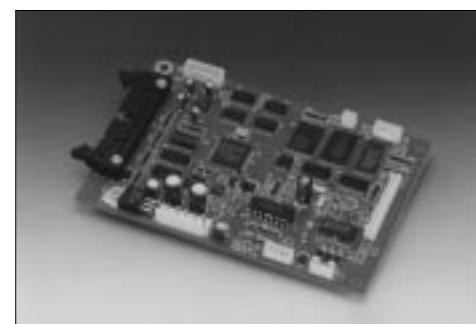
Front and bottom paper insertion is available.



FTP-632MCL101



FTP-632MCL353



FTP-622DCL/DSL4xx

■ PART NUMBERS

| Name | | Part Number |
|-------------------------------|-----------------------|---|
| Printer Mechanism | | FTP-632MCL101 (front paper insertion) FTP-632MCL102 (bottom paper insertion) |
| Printer Mechanism with Cutter | | FTP-632MCL353 (front paper insertion) FTP-632MCL354 (bottom paper insertion) |
| Interface Board | | FTP-622DCL411 ^{*1} (Centronics standard) FTP-622DSL438 ^{*2} (Gothic, Kanji, RS232C standard) |
| LSI (MCU) | | FTP-622CU201 ^{*3} |
| Interface Cable | Parallel (Centronics) | FTP-441Y201 |
| | Serial (RS-232C) | FTP-622Y301 |
| Cable | Power | FTP-622Y401 |
| | Head | FTP-622Y801 (FCC preassembled to mechanism) |

*1: FTP-622DCL411 is ANK supported only

*2: FTP-622DSL438 has FLASH memory and can print high speed images

*3: Supports Kanji and parallel and serial interfaces

■ GENERAL SPECIFICATIONS

| Item | Specifications | |
|--|---|--|
| Part number | FTP-632MCL101/102 | FTP-632MCL353/354 |
| Printing method | Thermal-sensitive line dot method | |
| Dot structure | 576 dots/line | |
| Dot pitch (Horizontal) | 0.125 mm (8 dots/mm)—Dot density | |
| Dot pitch (Vertical) | 0.125 mm (8 dots/mm)—Line feed pitch | |
| Effective printing area | 72 mm | |
| Number of columns | ANK 36 columns (12X24 dot font max.) ANK 48 columns (12X24 dot font max.) | |
| Paper width | 80mm \pm ₁ ⁰ | 85mm \pm ₁ ⁰ |
| Paper thickness | 60 to 100 μ m (there may be exceptions) | |
| Cutting type | --- | full or partial |
| Printing speed | 100mm/s (800 dotlines/s maximum at black-white image batch printing) | |
| Character types | Alphanumeric KANA International JIS Kanji (Kanji CG loaded board) | :159 :195 :approx. 6800 |
| Character, dimensions(H×W), number of characters | 12×24 dots,(1.5×3.0mm) 24×24 dots,(3.0×3.0mm) 8×16 dots,(1.0×2.0mm) 16×16 dots,(2.0×2.0mm) | 48 columns 28 columns 72 columns 36 columns |
| Interface | Centronics / RS-232C standard | |

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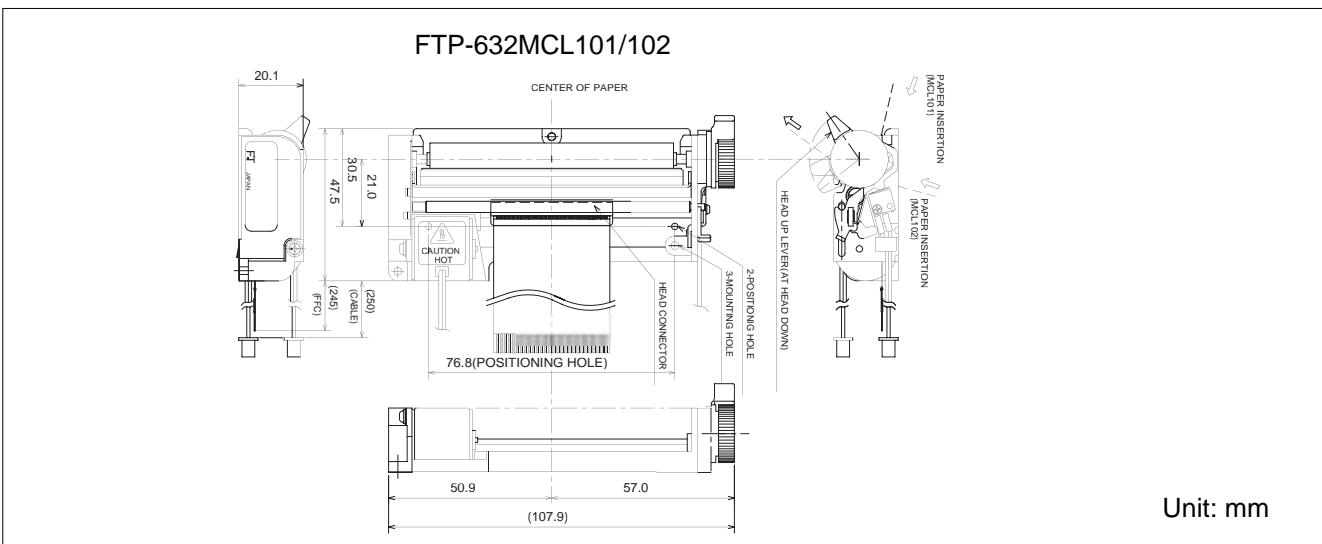
| Item | | Specifications | |
|-------------------------------------|---|--|--|
| Part number | | FTP-632MCL101/102 | FTP-632MCL353/354 |
| Power supply | For head | 24 VDC $\pm 5\%$ 2.3A (24V Rav1500 Ω , 25%printing ratio) | |
| | For printer motor | 24VDC $\pm 5\%$ 1A maximum | |
| | For cutter motor | --- | 24VDC $\pm 5\%$ 1A maximum |
| | For logic | 5VDC $\pm 5\%$ 0.5 A maximum | |
| Dimensions | Printer Mechanism | 108 (W) \times 48 (D) \times 20 (H) mm | --- |
| | Mechanism with cutter | --- | 117 (W) \times 57 (D) \times 38 (H) mm |
| | Interface board | 131 (W) \times 89 (D) \times 24 (H) mm | |
| Weight | Printer Mechanism | Approximately 94g | --- |
| | Mechanism with cutter | --- | Approximately 340g |
| Life | Head | Pulse durability: 1×10^8 pulse/dot (using Fujitsu Components' standard driving method) Wear resistance: 50 km (at 25% print ratio) | |
| | Cutter | ---- | 500,000 times minimum |
| Environmental conditions | Operating temperature | +5 to +40°C (Guarantee, but can operate between 0°C to +50°C) | |
| | Operating humidity | 20 to 85% RH (no condensation) | |
| | Storage temperature | -20 to +60°C (excluding paper) | |
| | Storage humidity | 5 to 95% RH (no condensation) | |
| Detection | Head temperature | By thermistor | |
| | Paper out/Mark detect | By photointerrupter | |
| | Head release | By slide switch | |
| Recommended thermal sensitive paper | 2 color paper (blue/black) (red/black) | PB770 (Mitsubishi paper) PB670 (Mitsubishi paper) | |
| | High sensitivity paper | TF50KS-E4 (Nippon paper) | |
| | Standard paper | TF60KS-E (Nippon paper), FTP-030P0104(80mm) PD150R (Oji paper), FTP-030P0701(80mm) | |
| | Medium term paper | TP60KS-F1 (Nippon paper), FTP-030P0102(80mm) PD170R (Oji paper) P220VBB-1 (Mitsubishi paper) PD160R-N (Oji paper) | |
| | Long term paper | AFP-235 (Mitsubishi paper) TP50KJ-R (Nippon paper) HA220AA (Nippon paper) | |

■ FUNCTION

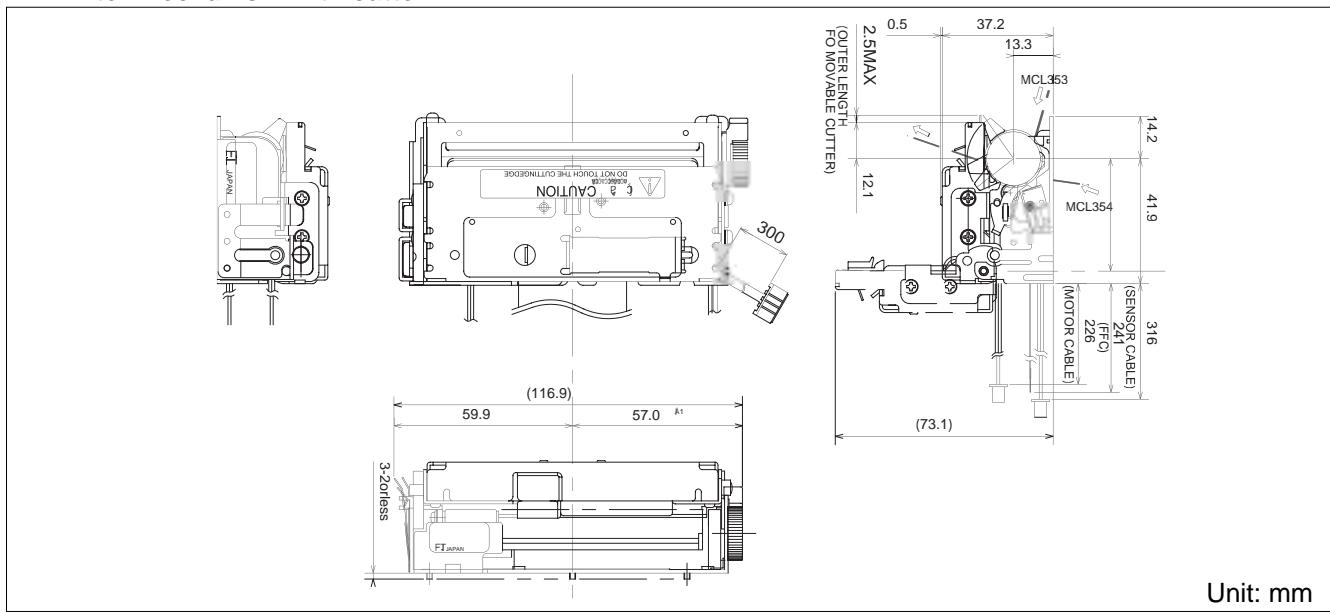
| ITEM | ITEM |
|---|--------------------------------------|
| 1. Test printing | 8. Motor power save |
| 2. Paper-out detection | 9. Mark detection |
| 3. Paper near end detection | 10. MCU trouble detection |
| 4. Head-up detection | 11. Power on/off sequence protection |
| 5. Abnormal temp. of thermal head detection | 12. Motor protection |
| 6. Blown fuse detection | 13. Hardware timer |
| 7. Abnormal voltage detection of head | |

■ DIMENSIONS

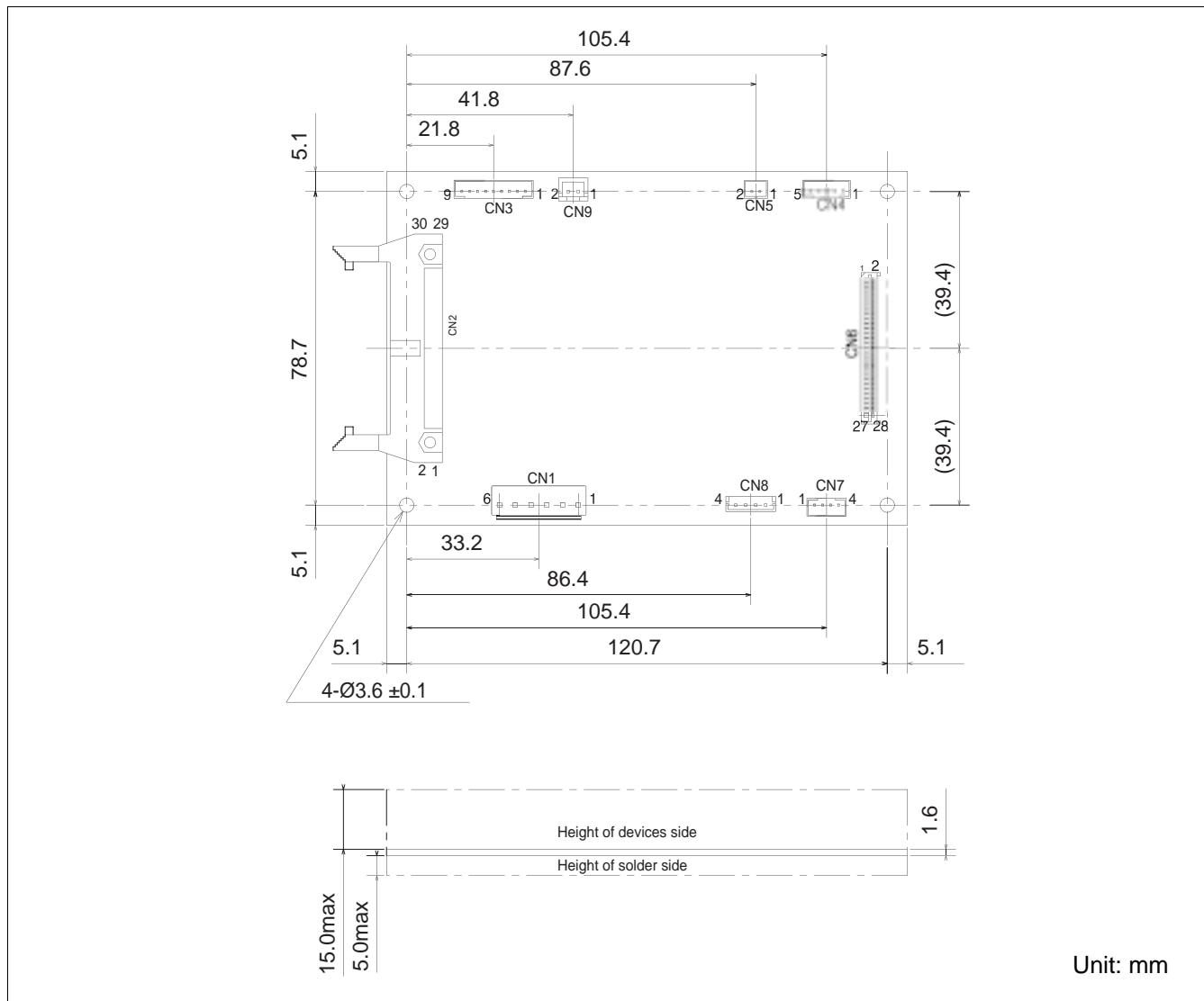
1. Printer mechanism



2. Printer mechanism with cutter



Interface board



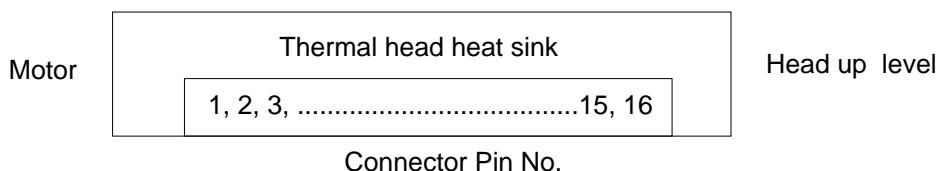
■ CONNECTOR FOR THERMAL HEAD

1. Thermal Head

Head side : IL-FPC-28CLIP (JAE)

Board side : 52045 (Molex) or equivalent

*1: Symbol: "—" means a negative logic signal



2. Motor connectors

Motor side : PHR-4 (J.S.T.) or equivalent

Board side : B4B-PH-K-S (J.S.T.) or equivalent

| No. | Signal | Comment |
|-----|-----------|-------------------------------|
| 1 | \bar{B} | Pulse motor driving \bar{B} |
| 2 | B | Pulse motor driving B |
| 3 | \bar{A} | Pulse motor driving \bar{A} |
| 4 | A | Pulse motor driving A |

| No. | Signal | Comment |
|-----|--------|---------------------------|
| 1 | VSEN | Power for paper sensor |
| 2 | PHE | Photo interrupter emitter |
| 3 | PHK | Photo interrupter cathode |
| 4 | SW1 | Head up detect switch 1 |
| 5 | SW2 | Head up detect switch 2 |

3. Cutter

Mech side : EHR-4 (J.S.T.) or equivalent
 Board side : B4B-EH (J.S.T.) or equivalent

| No | Cable Color | Name |
|----|-------------|----------------------------|
| 1 | White | Home position 1 |
| 2 | White | Home position 2 |
| 3 | Red | Motor energizing signal M+ |
| 4 | Black | Motor energizing signal M- |

■ FUNCTION

| | ITEM | ITEM |
|----|--|--------------------------------------|
| 1. | Test printing | 8. Cutter trouble detection |
| 2. | Paper-out detection | 9. Motor power save |
| 3. | Paper near end detection | 10. Mark detection |
| 4. | Head-up detection | 11. MCU trouble detection |
| 5. | Abnormal temp. of thermal head detection | 12. Power on/off sequence protection |
| 6. | Blown fuse detection | 13. Motor protection |
| 7. | Abnormal voltage detection of head | 14. Hardware timer |

■ INTERFACE, COMMAND, OPTIONS

Please refer to the FTP-622DCL4xx DATA SHEET and the FTP-622DCL4xx DATA SHEET for Interface, Command, and Options.

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